

## **REMARKS**

Claims 11, 14-21, and 25-26 are pending in the application. Claims 11, 14, 19, 21, and 25-26 have been amended. Further, claims 12-13, 22-25, and 27 have been cancelled. No new matter has been introduced by the amendment.

### **Informal Matters**

In response to the comments of the Examiner regarding an appeal, the applicant respectfully asserts that right to appeal of twice-rejected claims is statutory and is not subject to waiver by remarks made during an Examiner Interview.

### **Claim Rejection Under 35 U.S.C. § 102(b)**

Claims 11-17 and 25 have been rejected over Wallner et al. This rejection is overcome in view of the amendment of claims 11 and 25 together with the following remarks.

As disclosed by the applicant, beginning at page 19, line 12 and continuing to page 21, line 21 of the applicant's specification, the bacteria measuring apparatus analyzes a fluorescent light signal and a forward scattered light signal from the detection unit by means of an information processor. A scatter gram generator calculates the forward scattered light intensity from the maximum peak value of the input forward scattered light signal as particle size information. The analysis unit 143 determines the variance of the particles within the BCT region and determines the directional vector in which there is maximum variance. Based on the analysis the system determines whether the bacteria is coccus or bacillus. An example of the screen output is shown in FIG. 10 of the applicant's drawing.

Claim 11, as amended, recites a sampling device that includes a first detector for detecting size information and a second detector for detecting fluorescence information. A processor includes a memory that stores programs for enabling the processor to create a scattergram of the bacteria using the size information and the fluorescence information as parameters. A maximum variance direction of distribution of the bacteria in the scattergram is obtained by analyzing the distribution in the scattergram, and

whether the bacteria in the sample are bacillus or coccus is determined based on the maximum variance direction of the distribution.

According to the Office Action, Wallner et al. disclose a control unit that creates a scatter gram, analyzes cell size distribution and the bacterial morphology within a sample. Apparently, Wallner et al. then produce a distribution state that includes a maximum variance direction of the distribution, a slope of the maximum distribution and a detector detecting lights scattered from the light of the bacteria. The applicant asserts that claim 11, as amended, distinguishes over Wallner et al. (Office Action, pg. 4).

The applicant asserts that Wallner et al. fail to suggest or disclose a bacteria measuring apparatus that includes a processor and memory storing programs configured to create a scatter gram of the bacteria using the size information and fluorescence information as parameters. Wallner et al. further fail to suggest a processor having capability of obtaining a maximum variance direction of distribution of the bacteria in the scatter gram by analyzing the distribution and determining whether the bacteria in the sample are bacillus or coccus based on the maximum variance of the distribution. Although the Office Action characterizes the analysis as a functional intended use of the device, the applicants assert that claim 11, as amended, recites an apparatus that includes a structural configuration capable of performing the recited analysis. Accordingly, the applicant asserts that claim 11 recites a particular configuration for performing the recited bacteria analysis.

The rejection of claims 12-13 is now moot in view of the cancellation of these claims.

Claim 25, as amended, recites a bacteria measuring apparatus that includes a sampling device for sampling fluorescently stained bacteria, a first detector for detecting size information and a second detector for detecting fluorescence information. Claim 25 further recites a processor and memory storing programs enabling the measuring apparatus to obtain a maximum variance direction of distribution of the bacteria in a scatter gram created using the size information and the fluorescence information obtained from the bacteria. The processor further determines whether the bacteria in the sample are bacillus or coccus based on the maximum variance direction of the

distribution. As described above, the applicant asserts that Wallner et al. do not suggest or disclose a bacteria measuring apparatus configured as recited by claim 25.

Claims 11-15, 17, 19, and 25 have been rejected over Fukuda et al. This rejection is overcome in view of the amendment of claims 11 and 25 together with the following remarks.

The applicant's foregoing remarks pertaining to claims 11 and 25 are incorporated herein. The applicant asserts that Fukuda et al. fail to suggest or disclose a bacteria measuring apparatus including a sampling device, and first and second detectors, as described above. The applicant further asserts that Fukuda et al. fail to suggest or disclose a bacteria measuring apparatus including a processor and memory for storing programs that obtain a maximum variance direction of distribution of the bacteria and a scatter gram which is created by using the size information in the fluorescence information obtained from the bacteria. The processor further determines whether the bacteria in the sample are bacillus or coccus based on the maximum variance direction of the distribution. While Fukuda et al. disclose a flow cytometer measuring particle size of microorganisms in a culture, the assaying program determines first and second particle-size distributions from scattered light and determines the differences in the first and second particle-size distributions. The applicant asserts that Fukuda et al. merely disclose a device that can distinguish among several different types of bacteria, but does not include equipment configured to perform the analysis recited by claims 11 and 25.

The rejection of claims 12 and 13 is now moot in view of cancellation these claims.

Claims 14-15, 17 and 19 are allowable in view of their dependence from claim 11. Further, claim 19 has been amended to maintain correspondence with the amendment of claim 11 from which it depends.

#### **Claim Rejection Under 35 U.S.C. § 103(a)**

Claims 11-21 and 25-26 have been rejected over Wallner et al. in view of Kubitschek et al. and Chupp et al. This rejection is overcome in view of the amendment of claims 11 and 25, together the following remarks.

The applicant's foregoing remarks pertaining to Wallner et al. are incorporated herein. The applicant asserts that the Coulter-type impedance detector disclosed by Kubitscheck et al. does not overcome the deficiencies of Wallner et al. Kubitscheck et al. disclose the use of a Coulter Counter to determine cell volumes of bacteria by electronic measurement. (See pg. 1466, Col. 1, ¶ 1). Accordingly, the bacteria measuring apparatus recited by claims 11 and 25 substantially differs from the device disclosed by Kubitscheck et al.

The applicant further asserts that the addition of Chupp et al. does not overcome the deficiencies of Wallner et al. and Kubitscheck et al. Chupp et al. disclose that, in their fluorescence flow cytometry, the scattered light intensity and fluorescence emissions are detected, and each particle that passes through the flow cell can be mapped into a feature space. An analysis is carried out based on the mapping in the feature space. (See Col. 4, ll. 1-20). The applicant asserts that regardless of whether or not one skilled in the art would be motivated to combine the teachings of Wallner et al., Fukuda et al., Kubitscheck et al., and Chupp et al., the combination fails to suggest or disclose the applicants' claims. This is at least because none of the cited references, taken alone or in combination, suggest or disclose a bacteria measuring apparatus having a processor capable of executing the recited analysis.

The rejection of claims 12-13 is now moot in view of the cancellation of these claims.

Claims 14-21 depend directly or indirectly from claim 11. These claims are allowable at least in view of the amendment of claim 11 and the foregoing remarks. Further, claim 14 has been amended to change its dependency from canceled claim 13 to claim 11 and to correct an inadvertent typographical error. Also, claims 19 and 21 have been amended to maintain correspondence with the amendment of claim 11 from which they respectively directly and indirectly depend.

Claim 26 is allowable at least in view of the amendment and remarks pertaining to claim 25, from which it depends.

The applicant has made a novel and nonobvious contribution to the art of bacteria measuring apparatus design. The claims at issue distinguish over the cited references and are in condition for allowance. Accordingly, such allowance is now earnestly requested.

Respectfully submitted,

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